SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report

Proposed Amended Rule 1150.1 - Control of Gaseous Emissions from Municipal Solid Waste Landfills

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Deputy Executive Officer
Planning, Rule Development & Area Sources
Elaine Chang, DrPH

Assistant Deputy Executive Officer
Planning, Rule Development & Area Sources
Laki Tisopulos, Ph.D., P.E.

Director of Strategic Initiatives
Planning, Rule Development & Area Sources
Jill Whynot

AUTHOR:	DAIRO MOODY - AIR QUALITY SPECIALIST
REVIEWED BY:	DAVID ONO - PROGRAM SUPERVISOR NAVEEN BERRY – PLANNING AND RULES MANAGER JOHN OLVERA - PRINCIPAL DEPUTY DISTRICT COUNSEL LAUREN NEVITT - DEPUTY DISTRICT COUNSEL
CONTRIBUTORS:	DON HOPPS - AIR QUALITY SPECIALIST ANDREW LEE, P.E. - PROGRAM SUPERVISOR ATUL KANDHARI - AQ ENGINEER I JEFFREY INABINET - AIR QUALITY SPECIALIST

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BARRY R. WALLERSTEIN, D.Env.

Preface

On August 10, 2010, the Draft Staff Report and Proposed Rule (PR) 1150.1 Control of Gaseous Emissions from Municipal Solid Waste Landfills were released for a thirty day public review for a September 10 Public Hearing. This Final Draft Staff Report contains the current staff proposal for PAR 1150.1 which is scheduled for a February 4, 2011 Public Hearing. The changes and clarifications made since the August release of the PAR 1150.1 materials are summarized below:

- Removed subdivision (m) from the proposed amendment, which was included with the August 2010 proposal, and to address a California ballot measure regarding California Assembly Bill 32. This provision is no longer necessary.

- Added comments received subsequent to the release of the Draft Staff Report in August 2010, summarized in the Public Comments section of the report.

- Added comments received October 2010 from the California Air Resources Board (CARB), with responses from AQMD staff, summarized in the CARB Comments section of the report. Resultant changes to the proposed amendment include:

    - Updating the gas generation calculation methodology to reference the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines; and

    - Including additional exemption criteria based on the amount of waste-in-place and the gas generation rate.

- Updated compliance deadlines consistent with the December 2, 2010 CARB Regulatory Advisory, including:

    - Extending the compliance deadline to allow landfills to apply for and implement alternatives to this proposed amendment to April 1, 2011 and July 1, 2011, respectively; and

    - Revising the annual report due date from March 31 to March 15.

- Other minor administrative revisions and clarifications.

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EXECUTIVE SUMMARY

Rule 1150.1 – Control of Gaseous Emission from Municipal Solid Waste (MSW) Landfills, was originally adopted by the South Coast Air Quality Management District (AQMD) Governing Board on April 5, 1985 to regulate emissions from active landfills. Landfills generate gaseous emissions that are comprised of several pollutants of concern, including Non-Methane Organic Compounds (NMOC), Volatile Organic Compounds (VOC), Toxic Air Contaminant (TAC) and odorous compounds, as well as greenhouse gases in the form of methane and carbon dioxide. The originally adopted Rule 1150.1 and two subsequent administrative amendments in April 10, 1998 and March 17, 2000 were focused on controlling the non-greenhouse gas components of landfill gas because of the contribution to criteria pollutant formation from VOC emissions, potential for public nuisance from odorous compounds, and potential detriment to public health from TAC emissions. Recent legislative activity has focused on controlling greenhouse gases, including the approval of the California Global Warming Solutions Act of 2006 (AB 32). Because the California Air Resources Board (CARB) has adopted an early action measure under AB32 aimed at controlling methane emissions from landfills, the primary purpose of this amendment is to incorporate the state requirements into the rule. The proposed amendment would also improve enforceability and streamline requirements by clarifying operation standards for control devices already installed, and by eliminating duplicate recordkeeping and redundant reporting.

Elements of the proposed amendment fall into four categories: (1) incorporating CARB emission control requirements for Gas Collection and Control Systems (GCCS); (2) updating operation standards for control systems, including wellhead pressure gauge monitoring, to improve enforceability; (3) streamlining recordkeeping and reporting requirements; and, (4) revising rule language to address administrative corrections.

First, the proposed amendment would add methane emissions control and lower the monitoring emissions limit for landfill control systems from 50 ppmv to 25 ppmv to achieve equivalency to the CARB regulation for MSW landfills. CARB established the 25 ppmv limit based on data from South Coast Basin, which showed that the majority of landfills already comply with the lower limit and currently report values below the 25 ppmv limits based on currently required sampling.

Second, the proposed amendment incorporates GCCS operational requirements identified in the CARB regulation. The proposed amendment requires control devices (e.g., compressors, internal combustion engines, and boilers) to be in full operation at all times, unless an alternative is requested and approved. The proposed amendment further requires that wellheads

operate under negative pressure at all times to ensure that landfill gases are not escaping into the atmosphere, and also requires enclosed flares and enclosed combustion devices to operate with installed automatic dampers, automatic shutdown devices, and flame arrestors.

Third, the proposed amendment seeks to reconcile recordkeeping and reporting content and frequency with the requirements in the CARB regulation. While both the proposed amendment and CARB regulation have similar reporting requirements, they differ for annual reports. The proposed amendment consolidates the reporting of records into an annual reporting requirement to eliminate redundancy and minimize the burden on affected facilities.

Finally, the proposed amendment also deletes outdated language and adds definitions, minor clarifications, and editorial corrections to improve clarity and enforceability.

There is no expected significant cost increase associated with the proposed amendment because the collection and control equipment required by the CARB regulation to control methane have been installed and used by landfills within the District for over twenty years to control non-methane organic compounds. There may be administrative costs for processing requests for alternatives or changes to facility permits or plans, if needed.

The proposed amendment has no potential to adversely impact air quality or any other environmental area and is therefore exempt from CEQA pursuant to state CEQA Guidelines §15061 (b)(3) – Review for Exemption. A Notice of Exemption will be prepared upon adoption of the proposed amendment and forwarded to the four county clerks for posting.

BACKGROUND

Introduction

Municipal Solid Waste (MSW) landfills are classified to receive residential refuse that is collected separately from construction, hazardous and toxic waste. MSW is buried and compacted in the landfill where anaerobic decomposition generates large quantities of gas. This landfill gas, composed of near equal parts methane and carbon dioxide, also includes trace amounts (~ 1%) of non-methane organic compounds (NMOC), including volatile organic compounds (VOC), toxic air contaminants (TAC) and other odorous compounds. NMOC emissions contribute to ground level ozone formation, and represent a potential for public nuisance and detriment to public health, whereas methane is a greenhouse gas (GHG) that contributes to climate change, having a global warming potential 21 times greater than carbon dioxide. Methane is also known to be an explosive hazard and can damage

vegetation and crops. In California, MSW landfills are the second largest anthropogenic source of methane.

Control of MSW landfill gases in the District is accomplished by the use of an active collection system. An active collection system uses a prime mover to draw a vacuum on a collection system to compress the landfill gases and deliver the gases to a combustion device. MSW landfills bury and compress refuse in layers separated by non-biodegradable barriers. Interlaced between these layers are a network of vertical gas wells and horizontal collector piping that constitutes the collection system upon which the prime mover creates a vacuum to deliver landfill gases at a steady rate to the combustion device. The combustion device can be an open or enclosed flare, although more efficient landfill gas combustors are used in the District, specifically, internal combustion engines (ICE), heaters and boilers. Energy from these devices is often used to generate electricity, representing a potential supplemental revenue stream.

While the prime mover and the combustion device represent the control system, the collection system consists of the vertical wells and horizontal piping. Combined together, the control and collection systems constitute the vapor control system for MSW landfills.

The proposed amendment requires control of both NMOC and methane emissions through use of appropriate control and collection systems, and defines associated source testing, sampling, monitoring, recordkeeping, and reporting of excess emission from control and collection devices at ground level as well as subsurface migration of landfill gases towards the landfill boundary.

Regulatory History

Rule 1150.1 was originally adopted by the AQMD Governing Board on April 5, 1985 and has since undergone two subsequent amendments on April 10, 1998 and March 17, 2000. The April 10, 1998 amendment merged the Rule 1150.1 requirements for active MSW landfills with the Rule 1150.2 requirements for inactive MSW landfills. In 1988, EPA announced a decision to regulate landfills under the authority of the Clean Air Act (CAA) and proposed New Source Performance Standards (NSPS) in 1991, with promulgation in March 1996. The AQMD Governing Board approved an amendment to Rule 1150.1 to incorporate the NSPS Emissions Guidelines (EG) for existing landfills and NSPS emissions standards for new landfills in March 2000. As part of the same amendment, Sections 21140 and 20200 of Title 27 of the California Code of Regulations (CCR) were incorporated by reference into Rule 1150.1. Specifically, Section 21140 added requirements for closure and post-closure maintenance, and Section 20200 prohibited disposal of liquid and semi-liquid waste at Class III (municipal solid waste)

landfills in order to credit emission reductions under the state implementation plan.

Affected Industries

The rule amendment applies to existing MSW landfill facilities and any future MSW landfill facilities.

There are currently 83 MSW landfill facilities in the District that would be subject to the proposed amendment. Of these facilities, 19 are currently active facilities or facilities that accept residential refuse, 64 landfills are inactive facilities which no longer accept refuse but still generate significant levels of landfill gas. Table 1, below, shows the breakdown of active MSW landfills and inactive MSW landfills in the District.

Table 1. MSW Landfills in the South Coast Basin

County	Active Landfills	Inactive Landfills	Total
Los Angeles	11	35	46
Orange	2	13	15
Riverside	3	9	12
San Bernardino	3	7	10
Total:	**19**	**64**	**83**

Rule 1150.1 applies to both active and inactive landfills and while there is less activity at inactive landfill sites because they have been capped with layers of earth fill, they continue to have the potential to generate landfill gas emissions for a long period of time. The proposed amendment continues to focus on landfill gas control and collection methods and elimination of associated fugitive emissions.

SUMMARY OF PROPOSED AMENDED RULE 1150.1

Overview

The proposed amendment is intended to incorporate the requirements of the CARB AB32 early action measure for MSW landfills (Title 17, CCR , Article 4, Subarticle 6). While the primary purpose of the proposed amendment is to incorporate control of methane emissions into the rule, the proposed amendment is also aimed at improving enforceability and streamlining requirements by clarifying operation standards for control devices already installed and eliminating duplicate recordkeeping and redundant reporting.

Elements of the proposed amendment fall into the following four categories:

1. Incorporating CARB emission control requirements for gas collection and control systems (GCCS).

2. Updating operation standards for control devices, including wellhead pressure gauge monitoring, to improve enforceability.

3. Streamlining recordkeeping and reporting requirements.

4. Revising rule language for administrative changes.

Gas Collection and Control System Emission Control Requirements

The proposed amendment extends the emission limits of the current rule to include methane as prescribed by the CARB regulation. These limits are associated with controlled emission levels based on system control efficiency as well as monitoring of control system components and fugitive emission concentrations at the surface and subsurface to ensure system integrity.

The proposed amendment requires instantaneous and integrated surface monitoring for MSW landfills consistent with the CARB regulation to check the gas collection system for malfunctions and leaks. Instantaneous monitoring measures instant surface emissions of total organic compounds (TOC), while integrated monitoring is done using instrument analysis of TOC over a 50,000 square foot grid and sampled for lab analysis for TAC. The proposed amendment continues to require subsurface refuse boundary monitoring, a process in which probes are placed around the perimeter of the landfill site at different depths to measure gas migration. Monthly samples are taken to determine if subsurface gases are approaching or going beyond the boundary of the landfill.

Gas Collection and Control Systems

Installation and operation of a GCCS has been required since the original adoption of Rule 1150.1. The proposed amendment incorporates control of methane emissions consistent with the CARB regulation, including requirements for design and emission limits.

Although landfills within the District currently operate with existing GCCS, the proposed amendment incorporates the CARB requirements for design plans associated with site-specific gas collection and control systems that are not covered under a Permit to Construct or Permit to Operate; GCCS must be operated, maintained and expanded according to an approved design plan in the absence of an aforementioned permit. The proposed amendment applies the Professional Engineer certification requirements for design plans to also cover certification for any plan revisions. Finally, the proposed amendment

requires that design plans have a description of mitigation measures to be used in case there is release of methane or NMOC into the atmosphere during installation of landfill components or when there are repair work or system shutdowns of the GCCS.

The proposed amendment requires that the GCCS be operated as an active gas collection system on a continuous basis, including situations where there is low flow, which may require operators to supplement landfill gases to maintain combustion in GCCS control devices or pursue an approved alternative.

The conditional use of open flares has been added to the proposed amendment, even though there are very few such devices in the District. The proposed amendment restricts use of open flares by date of use. Any open flare operated before August 1, 2008 may operate until January 1, 2018. Operation of an open flare beyond 2018 will require the approval of the Executive Officer with documentation to support the request. The temporary use of open flares for repairs and maintenance while an enclosed flare is being repaired would also require approval from the Executive Officer.

The proposed amendment requires enclosed combustion devices to achieve a methane destruction rate of 99% by weight in addition to reducing NMOC by at least 98% by weight and 3,000 ppmv for internal combustion engines at the outlet. Existing controls at MSW landfills in the District will be able to meet the new CARB requirement. During startup and shutdowns there must be enough supplemental fuel for the burners to prevent landfill gas venting to the atmosphere.

The proposed amendment requires GCCS under positive pressure to operate with no leaks exceeding 500 ppmv. Any leak discovered by the facility must be tagged and repaired in 10 days.

Finally, the proposed amendment will require all wellheads to be under negative pressure at all times, except during wellhead rising and repair, during temporary shutdown of the GCCS, or after catastrophic events.

Gas Control System Monitoring

The proposed amendment to this rule includes a leak standard of 500 ppmv for components under positive pressure, which requires monitoring of all components used in the gas collection and control system, including blowers, compressors, connectors, fittings, flame arrestors, flanges, knock-out drums, pipes, sampling ports, and valves. If excess emission leaks are identified from these components, the proposed amendment requires repair and re-sampling consistent with the timeframes of the CARB regulation.

Gas Collection System Monitoring

The operational efficiency of GCCS is determined by monitoring migration of underground landfill gases and liquids to the property boundary, and by monitoring leaks at the landfill surface.

Consistent with the CARB regulation, the proposed amendment lowers the limit for integrated surface monitoring from 50 ppmv to 25 ppmv, and also adds an additional requirement for recording instantaneous monitoring results that exceed 200 ppmv TOC for data collection purposes. Landfills in the District are currently meeting the 25 ppmv level.

The current version of Rule 1150.1 requires the repair of components that contribute to the exceedance of the aforementioned monitoring levels in accordance with prescribed timeframes. Following initial discovery, the GCCS must be repaired and re-monitored or re-sampled within 10 days. If the follow-up testing shows a second exceedance, another 10 days is allowed for repair and re-testing. Finally, if there is a third exceedance, corrective action is required to install and operate a replacement within 45 days from initial discovery. Although the CARB regulation provides for a final 120 days rather than 45 days from initial discovery, the District is proposing to maintain the current timeframes, based on historical implementation, and to avoid relaxing a SIP approved rule.

Surface and Subsurface Emission Standards and Monitoring

Current Rule 1150.1 not only requires both surface landfill sampling and monitoring, but also requires a subsurface refuse probe boundary sampling system. The subsurface monitoring is absent in the CARB regulation for landfills because another State agency has jurisdiction for subsurface monitoring (CalRecycle). Attachment A of the current rule contains the requirements for subsurface monitoring, with the intent towards design and installation consistent with CalRecycle subsurface boundary probe requirements. The proposed amendment maintains these requirements.

Instantaneous Surface Monitoring

Instantaneous monitoring is conducted by the MSW landfill owner or operator once a quarter (or every three months) by traversing a walking pattern of the grid in search of leaks that exceed the 500 ppmv emission standard. The CARB regulation requires measured methane emission leaks of 200 ppmv or greater be recorded for data collection purposes, but the emission standard that triggers corrective action is set higher at 500 ppmv. The 200 ppmv level for recording leaks has been added to the proposed amended rule.

Integrated Surface Monitoring

CARB used SCAQMD data obtained from monitoring records to determine that the current emission standard in Rule 1150.1 could be reduced from 50 ppmv to 25 ppmv. In order to maintain equivalent limits, the proposed amendment lowers the integrated surface monitoring limit to 25 ppmv. Integrated surface monitoring is conducted monthly and is intended to monitor the MSW landfill in greater detail than instantaneous surface monitoring provides.

Two different methods for integrated surface monitoring have been used at MSW landfills. One method includes a monitoring apparatus that slowly ingests samples while the operator traverses a portion of the grid. The sample is contained in a tedlar bag, and the content is analyzed by an approved lab. If an exceedance of the integrated surface emission standard is determined, the operator is required to return to that portion of the grid and identify the specific area of concern. The second method for conducting integrated surface monitoring includes use of a flame ionization detector, calibrated to methane. AQMD staff has witnessed some hydrocarbon detection models using this method that not only detect emission leaks but also concurrently identify the exact location, so that the operator can readily initiate corrective action. Either method is acceptable for Rule 1150.1.

Combination Instantaneous and Integrated Surface Monitoring

Because the frequency for instantaneous monitoring is monthly and integrated monitoring is quarterly, there is an overlap in the two required events every three months. Rather than walk the same grid for two separate samplings during this overlapping period, county landfill operators in the District have reported conducting combined sampling without complication or significant procedural changes. Results are recorded separately on approved District forms and meet the intent of the current rule and proposed amendment. CARB is considering, either through regulation or on a case-by-case approval process, recognizing this practice through future guidance documents.

Subsurface Refuse Boundary Monitoring

The Subsurface Refuse Boundary Monitoring measures and detects underground lateral movement of landfill gases and liquids from the refuse footprint toward the landfill boundary line and onto neighboring property. Attachment A of the current version of Rule 1150.1 requires monthly samples that report less than 5 percent TOC from each probe. The proposed amendment maintains this requirement.

Operational Standards

Gas Collection and Control Devices Continuous Operation

Currently, Rule 1150.1 requires that control or treatment systems be operated at all times when collected gas is being routed to them. Conversely, current implementation of the rule allows for shutting down system components where collected gas is not being routed. The proposed amendment incorporates the requirement of the CARB regulation that calls for documentation of minimum flow through an approved alternative. As such, the proposed amendment requires continuous operation of the active collection system at all times, except where an alternative has been approved that establishes appropriate conditions to allow periods of interrupted operation.

Components under Positive Pressure Monitoring

Because it is necessary to pressurize components that deliver fuel in order to ensure a constant flow of landfill gases under pressure for combustion, the proposed amendment requires that all components that transfer landfill gases be monitored quarterly for leaks. Should a leak be detected at 500 ppmv or greater, the proposed amendment requires repairs be made in a timely manner through corrective action such as tagging the leak location and repairing the leak within 10 calendar days. Another reason for this proposed amendment is to make the requirements for compression and combustion equipment used in landfill gas generation to be comparable to the requirements subject to SCAQMD Rule 1173.

Wellhead Negative Pressure and Monitoring

The proposed amendment requires that wellheads be maintained under constant vacuum or negative pressure at all times. Wellheads are above ground components that are connected to a central header in the collection system for landfills. A negative pressure ensures that landfill gas is channeled through the collection system to the control devices and into the collection control system.

Furthermore, the proposed amendment requires monthly monitoring of wellhead gauge pressure to ensure negative pressure is maintained. Positive pressure readings require corrective action within five days. If after the first five days the positive pressure persists, an additional 15 days are allowed for corrective action. Finally, all corrective measures including expansion must be completed and the gas collection system must be operational within 120 days of when the first positive pressure reading was found.

Alternatives

Currently, Rule 1150.1 allows facilities to request and obtain District-approved alternatives to specific sections of the rule. The proposed amendment continues this practice in a manner analogous to the CARB regulation, which allows for requested "Alternative Compliance Options." Such collective "alternatives," if approved, would be incorporated into a facility's Rule 1150.1 Compliance Plan.

Recordkeeping and Reporting Requirements

The proposed amendment includes requirements from the CARB regulation that have been incorporated to improve consistency and minimize duplicative recordkeeping, while also allowing for the keeping of records in paper, electronic form, or other suitable format. In short, the proposed amendment updates the monitoring exceedance levels for recordkeeping consistent with the proposed amended emission limits, adds additional requirements for keeping and retaining records of source tests, periods of GCCS non-operation, component and surface monitoring results, exceedances and corrective actions, as well as the keeping of records associated with waste acceptance, current amount of waste in place, landfill areas excluded from collection systems, and landfill closure.

The proposed amendment requires owners and operators to maintain original source test results and all annual performance tests results; if the combustion device is an open flare, all flare monitoring and records of periods when the pilot flame or flare flame is not present must also be maintained.

The proposed amendment requires any results greater than 25 ppmv during integrated monitoring sampling and corrective actions taken to be recorded.

The proposed amendment requires owners and operators to maintain records for instantaneous sampling for monitoring readings greater than 200 ppmv. Corrective action records continue to be required at the 500 ppmv level as identified in the current rule.

While the current version of Rule 1150.1 requires recording of periods where the collection or control device system has not operated for longer than an hour, the amended version of the rule extends this requirement to include recording of installations of collection or control equipment, excavation of solid waste material, and construction activities that require exposing waste to the atmosphere. The proposed amendment further requires recording of a description of the activity, the affected area, the reason for the action, the start and finish time and date, a list of the landfill components affected or replaced, and the mitigation measures taken.

The proposed amendment requires owners and operators to maintain records of solid waste acceptance, solid waste acceptance rate, and the current amount of waste in place. Furthermore, owners and operators would be required to maintain all records of non-degradable waste acceptance, including the location, and amount deposited into any landfill area that excludes a collection system.

The proposed amendment requires the owner and or operator to keep records of positive wellhead gauge pressure measurements, including the date, measurement, well identification, and corrective action taken.

The proposed amendment adds additional recordkeeping requirements for Closure Reports, including the last day the landfill accepted solid waste, the project closure date, and the estimated waste-in-place.

Administrative Changes

In addition to minor rule language updates to remove outdated language and clarify definitions, the proposed amendment includes the following:

Test Methods

The CARB regulation considers VOC and methane interchangeable for control purposes since both are contained in the landfill gas stream and subject to destruction efficiency requirements. Therefore, the proposed amendment cites various source tests applicable for VOC and methane alone or in combination. The proposed amendment requires source testing of gas control devices for VOC and for methane using EPA Methods 25 and 18, as well as AQMD Method 25.1 (for VOC and methane), AQMD Method 25.3 (VOC and methane) and ASTM Method D1945 and D1946 (for methane only).

Incorporate 40 CFR, Part 63, Subpart AAAA by Reference

Subpart AAAA of the National Emissions Standard for Hazardous Air Pollutants (NESHAP), promulgated in 2003 by the EPA under authority of the Clean Air Act (CAA), section 112, is incorporated into the proposed amended rule by reference. The incorporation of 40 CFR, Part 63 Subpart AAAA of NESHAP requires all MSW Landfills that have bioreactors, and Title V facilities, to comply with this subpart by creating and using a Start-up, Shut down, and Malfunction Plan (SSMP).

EMISSION REDUCTIONS

The proposed amendment is not expected to result in emission reductions. In order to maintain equivalency with the CARB landfill regulation the emission limit for integrated monitoring sampling was lowered from 50 to 25 ppmv.

Compliance with the 25 ppmv has been achieved in practice with control and collection systems required at the 50 ppmv level and therefore no actual emission reductions are achieved or claimed.

COMPARATIVE ANALYSIS

As required by Health and Safety Code Section 40727.2, the purpose of this analysis is to identify and compare any other AQMD or federal regulations that apply to the same equipment or source type.

The existing and the proposed amended Rule 1150.1 are not in conflict with National Emissions Standard for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart AAAA. On January 16, 2003 the US EPA promulgated the landfill NESHAP under the authority of CAA, section 112. The Landfill NESHAP applies to major sources (Title V facilities) and contains the same requirements as landfill emissions guidelines and Landfill NSPS, but add requirements for startup, shutdown, and malfunction (SSM), operating conditions, and deviations for out-of-bound monitoring parameters (see Table 3). Table 2 below shows a breakdown of Title V and Non Title V MSW landfills by county in which they operate.

Table 2. Title V and Non Title V MSW Landfills by County

County	Title V	Non Title V	Total
Los Angeles	17	29	46
Orange	6	9	15
Riverside	3	9	12
San Bernardino	7	3	10
Total:	**33**	**50**	**83**

The NESHAP Landfill regulation makes reference to a guidance document that explains how to prepare a startup, shutdown, and malfunction plan (SSM Plan) for municipal solid waste landfills. The guidance document requires those landfills that have a collection and control system or who must install one, to prepare a SSM Plan. This subpart addresses concerns with the malfunction of landfill gas collection, control, and treatment systems and requires landfills to document the reasons causing the malfunction, corrective measures taken, and measures taken to prevent future problems.

In the District there are thirty-three Title V MSW landfills facilities (under Standard Industrial Classification Code 4953, 1600, 9711; NAICS Code 562212) and fifty facilities that are not required to have Title V permits. The thirty-three Title V facilities are required by Part 70 and 71 of the Clean Air

act to have a SSM Plan and are thereby required to follow the procedures in the plan during startups, shutdowns, and malfunction. Table 3−Comparison of MSW Regulations−has been prepared to show a comparison between the proposed amended Rule 1150.1, guidance document, and NESHAP Regulation Subpart AAAA.

Table 3. Comparison of MSW Regulations

Category	Proposed Amended Rule 1150.1	U.S.EPA CTG	USEPA NESHAP 40 CFR 63 Sub-Part AAAA
Purpose	To prevent public nuisance and possible detriment to public health	The document is intended to explain how to prepare a startup, shutdown, malfunction plan for MSW facilities	Establishes National Emission Standards for Hazardous Air Pollutants for existing and new municipal solid waste landfills
Applicability	Rule 1150.1 applies to each active and inactive MSW landfill	Owner and operators of MSW landfills who need to comply with NESHAP requirement for startup shutdown malfunction plans	Applies to MSW landfills that are a major source >= 10 tons/yr HAP or 25 ton/yr combo HAP or facility> 2.5MM Mg design capacity
Averaging Provisions	None	None	None
Units	▪ ppmv ▪ Percent by volume	None	None
Operating Parameters	Uses current source test results and conditions of S/T as operation parameters and operation limits	For equipment associated with collection and control of landfills gas regulation requires records of standard operation procedure to prevent emissions to atmosphere	The NESHAP refers to guidance document for records and reporting for control and collection equipment operation parameters
Method to Determine VOC	U.S.EPA Method 21 U.S. EPA Method 18	Not Identified	Subpart AAAA refers to Subpart WWW for US EPA Method 21 and Method 18
Capture Efficiency	U.S.EPA Method 25 U.S. EPA Method 18	Not Identified	Subpart AAAA refers to Subpart WWW for US EPA Method 25 and Method 18
Control Device Efficiency	U.S.EPA Method 25 &18	Not Identified	U.S.EPA Method 25 & 18
Work Practices	▪ Boundary monitoring ▪ Surface and subsurface sampling and monitoring ▪ Collection system pressure monitoring	Not Identified	Active landfills must comply with subpart WWW sampling and monitoring requirements
Monitoring	Done by monthly sample collection and testing for pressure, temperature TOC and TAC	Not Identified	Regulation refers to subpart WWW for monitoring requirements
Reporting	Annual source test report, annual report, when needed closure & decommissioning report	Document outlines the content, for required records to be contained in report and form, and frequency of required reports	Regulation refers to Guidance document for SSMP for landfill control and collection systems reporting requirements
Recordkeeping	Rule requires records for: all control equipment testing, results from monthly and quarterly monitoring and sampling, combustion device temperatures readings, flow records from control devices	Document details the form and content of the SSM plan and the data from the gas control system and the gas treatment system to be recorded. Requires a description of each process and occurrence and duration of each malfunction. The action taken to correct malfunction and any deviation from the plan.	Comprehensive records required annually to support compliance with NESHAP

SOCIOECONOMIC ASSESSMENT

The proposed amendment is mostly administrative and will coincide with the implementation of CARB regulations for MSW landfills which affect landfills in the South Coast Basin. The proposed amendment is not expected to result in adverse socioeconomic or environmental impacts since the proposed rule does not significantly affect air quality or emissions limitations, and does not impose new controls. However, facilities may have additional administrative costs if they choose to pursue or amend an existing Rule 1150.1 Compliance Plan to request alternatives to the new requirements of the proposed amendment. However, by including state and federal requirements in Rule 1150.1 and implementing the CARB regulation locally, these costs should be offset through the minimization of duplicate recordkeeping and reporting.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The SCAQMD has reviewed the proposed project pursuant to the CEQA Guidelines §15002 (k)(1), the first step of a three-step process for deciding which document to prepare for a project subject to CEQA. Staff has prepared a Notice of Exemption (NOE) for Proposed Amended Rule (PAR) 1150.1 for the following reasons: 1) the proposed amendments incorporate state regulations adopted by the California Air Resources Board (CARB) that specify requirements for municipal solid waste landfills; and 2) collection and control equipment required by CARB's regulation has already been installed and is currently in operation at all affected South Coast Basin municipal solid waste landfills since the adoption of the current rule on April 5, 1985. Since the proposed project is approving established regulations and will not require new equipment that would generate new adverse environmental impacts, it can be seen with certainty that the proposed project has no potential to adversely impact air quality or any other environmental area and is exempt from CEQA pursuant to state CEQA Guidelines §15061 (b)(3) – Review for Exemption. The Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties immediately following the adoption of the proposed project.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing rules, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication and reference, based on relevant information presented at the hearing. The draft findings are as follows:

Necessity: The AQMD Governing Board has determined that a need exists to amend Rule 1150.1 - Control of Gaseous Emissions from Municipal Solid Waste Landfills, to improve consistency with CARB's Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills in terms of monitoring limits and recording and reporting requirements and to implement the requirements of 40 CFR, Part 63 Subpart AAAA – National Emissions Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills.

Authority: The AQMD obtains its authority to adopt, amend or repeal rules and regulations from California Health and Safety Code Sections 39002, 39650, 40000, 40001, 40440, 40441, 40463, 40702, and 40725 through 40728, 41508, 41700, and 42300.

Clarity: Rule 1150.1 - Control of Gaseous Emissions from Municipal Solid Waste Landfills, as proposed to be amended, is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency: Proposed Amended Rule 1150.1 - Control of Gaseous Emissions from Municipal Waste Landfills is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or federal or state regulations.

Non Duplication: Rule 1150.1 - Control of Gaseous Emissions from Municipal Solid Waste Landfills, as proposed to be amended, does not impose the same requirements as any existing state or federal regulations, and the amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, the AQMD. The proposed amendment consolidates existing state and federal requirements.

Reference: This regulation would implement, interpret or make specific the provisions of: Health and Safety Code Sections 40001 (rules to achieve ambient air quality standards), 40440(a) and (c) (rules to carry out the Air Quality Management Plan and rules which are also cost-effective and efficient), 40702 (rules to execute duties necessary to preserve original intent of rule), 40910 et seq., (California Clean Air Act), and Federal Clean Air Act §111 (New Source Performance Standards).

COMMENTS AND RESPONSES

Public Comments

A public workshop was held on June 25, 2010 in which approximately 15 people attended. Participants provided comments at the meeting and three followed up letters were received. The following section summarizes the comments received at the meeting and staff's responses.

Comment #1

Will implementation of this AB32 regulation require additional CARB oversight or delegation to the District with respect to inspections and other enforcement activities? Full delegation to the District is preferred.

Response

Local air districts that currently have regulations for landfills or adopt a rule can enter into a Memorandum of Understanding (MOU) with CARB to be responsible for implementing the rule for the state. SCAQMD is proposing to amend Rule 1150.1 to include all State requirements so as to minimize the recordkeeping and reporting burden associated with reporting to two agencies. CARB staff will likely review and audit implementation activities by air districts.

Comment #2

What are the expected emission reductions from PAR 1150.1?

Response

The proposed amendment to Rule 1150.1 is not expected to result in emission reductions. Although the proposed integrated monitoring limit represents a reduction from 50 to 25 ppmv because records have shown monitoring results consistently below 25 ppmv in the majority of landfills, the proposed amendment would only reflect current emission levels rather than result in actual reductions.

Comment #3

Because AB32 is currently being challenged under a ballot measure in November, it may be prudent to delay consideration of PAR 1150.1 until December.

Response

Consideration of PAR 1150.1 has been delayed until after the November 2010 election.

Comment #4

Will landfills be allowed to maintain existing approved alternatives under PAR 1150.1, or will they need to re-apply for them?

Response

Compliance plans would need to be updated for Title V facilities when their 5-year renewal cycle occurs, to reflect the most recent rule requirements. If the

facility does not need to request an approved alternative because of changes to the rule, then no action would be required. To add to an existing compliance plan, an application would be necessary.

Comment #5

PAR 1150.1 refers to different plans, including a design compliance plan and an alternative compliance option. What are the differences between the different plan types, and if there is no difference, can PAR 1150.1 be modified to use consistent terminology?

Response

Staff agrees and the rule language has been changed to remove the term "Compliance" when referring to the Design Plan. In addition, the CARB regulation reference to use of the term "Alternative Compliance Option" is equivalent to the term "alternative" in the proposed amendment.

Comment #6

Previously, Rule 1150.1 required extensive work in developing a set of alternative work practices that both the District and the landfills could agree to. Under PAR 1150.1, will the District support a collaborative effort to expedite development of additional alternatives?

Response

Yes, staff will work with landfill operators to streamline the alternative approval and Rule 1150.1 Compliance Plan process.

Comment #7

The translation from source test results to parameter requirements in PAR 1150.1 should be clarified further.

Response

In response to this comment, staff has improved references from subparagraph (d)(1)(C) which require an operational need for source testing for control devices and refers to paragraph (e)(7) monitoring requirements which call for monitoring of parameters used in source tests.

Comment #8

There is a concern about the requirement for continuous operations, while AQMD anticipates breakdowns; paragraph (d)(14) requires continuous operations. We suggest wording that would comply with CARB Rule 95464(e). Proposed paragraph (d)(14) anticipates that SCAQMD's

breakdown provision is broad enough to cover the intent of the CARB provisions. However, we have at least one situation at a landfill where annual preventative maintenance on an Edison substation causes us to shut our system down for about eight hours. This is technically not a breakdown, and under the new language would cause us to now get a variance.

Response

The proposed amendment allows for use of approved alternatives. This situation is appropriate for case-by-case review and evaluation, and may also be more appropriately included as permit conditions, since maintenance, and particularly scheduled maintenance, is dependent on the type of control used. This would not require a variance.

Comment #9

The PAR and staff report indicate that the regulation intends to use the Title 27 probe requirements, but the rule was not adequately changed to do this, and requires compliance with both requirements. The probes should meet Title 27 requirement, if applicable, or otherwise meet AQMD requirements.

Response

Paragraph (d)(9) of the proposed amendment has been revised to require all active and inactive landfills that have not been given written approval by CalRecycle for installation of subsurface refuse boundary sampling probes to be required to design and install according to Attachment A sections 1.1.

Comment #10

It is our understanding that the CARB regulation allows for 120 days to install and operate new wells whereas Rule 1150.1 and PAR 1150.1 only allow 45 days, which is a financial burden with little to no air quality benefit, as the wells may not be fully compliant during initial startup. It is recommended that the time period be extended to 120 days for consistency and to reduce compliance costs.

Response

The current rule requirements under subdivision (e) allow for 45 days so changing to 120 days would be a relaxation of the current SIP approved rule. However, subparagraph (i)(2) of the proposed amendment provides for use of approved alternatives for landfills that can demonstrate sufficient additional need.

Comment #11

The requirement under clause (d)(1)(C)(iv)(IV) for sufficient flow of commercial natural gas is impractical to implement and would represent a significant cost impact.

Response

Staff has reviewed this comment relative to the CARB regulatory requirement and removed this requirement from the proposed amendment.

Comment #12

Use of the term "vapor-tight integrity" seems to be contradictory with the nature of landfills. Landfills by nature release vapors. This term should be reviewed and revised.

Response

The term "vapor tight integrity" was removed from the proposed amended language and replaced with revised language to meet the intent of this comment.

Comment #13

Subparagraphs (e)(4)(B) and (e)(4)(C) require 10 days and 45 days, respectively, to address wellhead pressure repairs and new well installations. The first should be modified to indicate that the 10-day clock is measured from the time of the last repair rather than the first measurement, and the second should be modified from 45 days to 120 days.

Response

Changes have been made to the proposed amended rule so that it is comparable to the CARB regulatory convention of 5 days from the first positive pressure reading; if the problem is not corrected, 15 days from the first positive pressure reading, and if not resolved, 120 days from the first positive pressure reading.

Comment #14

The purpose of PAR 1150.1 should be updated to note that, with respect to control of methane that the purpose is to support implementation of AB32 rather than extend the purpose of the original Rule 1150.1, which is to address public nuisance and exposure to NMOC and TACs.

Response

Staff has revised the proposed section of rule language to meet the intent of this comment to segregate the inclusion of methane emissions control from NMOC and TACs.

Comment #15

The term (f)(2)(C) "closure" may need to be defined for clarity.

Response

Staff has reviewed the proposed language and understands that the comment is intended to distinguish the difference between "closed" and "inactive." Because use of the term "closure" is in context with adjoining rule language (e.g., "closure report"), staff did not make this change in the rule.

Comment #16

Please see rule language in Rule 1110.2 related to source testing and consideration of violation notices, and consider using the same language for PAR 1150.1.

Response

Staff agrees, and has revised the proposed amended language to incorporate language similar to Rule 1110.2.

Comment #17

Term "insignificant risk" in paragraph (k)(3) is too broad and should be either defined or narrowed in scope.

Response

Staff has reviewed the proposed amendment language relative to use of the term "insignificant risk". Because the criteria identified in paragraph (k)(3) relates to pre-existing regulatory thresholds that are deemed "significant", staff has changed the language in the proposed amendment to refer to "less than significant" rather than "insignificant". This clarification is not expected to change how this provision is implemented.

Comment #18

Staff should change (d)(16) to allow operation of the gas system to "prevent" fire in addition to "extinguishing" a fire. Preventing a fire is more critical than extinguishing the fire. We believe this addition falls within the intent of this section.

Response

The intent of subparagraph (d)(16)(B) is to allow exceptions for turning off control and collection devices in the event of catastrophic events, in order to make repairs as part of a temporary shutdown. Staff understands the commenter's request to replace "extinguishing" with "preventing"; however, staff believes that doing so would weaken the intent of the section, as compared to the same provisions in the CARB regulation. Therefore no change was made in the section.

Comment #19

The issue of operating parameters in (d)(1)(C)(ii)(IV) [The enclosed flare shall be operated within the parameter ranges established during the initial or most recent source test] and (d)(1)(C)(iv)(VI) needs to be clarified.

Response

The requirements of clause (d)(1)(C)(ii) apply to enclosed flares while clause (d)(1)(C)(iv) applies to enclosed control devices other than flares. Both require operation within source test parameters.

Comment #20

In (d)(1)(C)(i), add the Lean Burning Engine requirements due to cross-references. Revising this section allows (d)(1)(C)(iii)(I) to be eliminated.

Response

Staff has reviewed the clause referring to Lean Burn Engines. Clause (d)(1)(C)(i) lists general requirements for all control devices, of which lean burn ICEs are included. The specific requirements for lean burn engines would be appropriate in clause (d)(1)(C)(iv) requirements for "enclosed combustor or other than a flare".

Comment #21

In (e)(1) we would recommend using Title 27 requirements, or retaining the existing timeline requirements. It is not clear why the requirement on the second exceedance would be reduced from 10 days to 7 days.

Response

Staff agrees and has revised the proposed amended language back to 10 days for the first occurrence, 10 days for the second occurrence and 45 days for the third.

Comment #22

The allowance for annual monitoring in (e)(3) differs from 95469(a)(1)(c) by leaving out the word "area."

Response

The allowance in PAR 1150.1 (e)(3) applies to closed and inactive landfills, whereas Section 95469 of the CARB regulation applies to closed and inactive landfills as well as closed and inactive sections (areas) of active landfills. This was not extended to active landfills in the proposed amendment to allow a review by the Executive Officer of documentation for areas or sections that are closed or inactive in an active landfill. This review would be handled as part of an approved alternative under the proposed amendment.

Comment #23

The timeline in (e)(4) should be made consistent with the CARB timeline, as the time periods (10 days versus 15 days) should be counted from the prior monitoring and not from the initial monitoring.

Response

The five days for the initial exceedance has been changed to 10 calendar days and the second exceedance has been changed from 10 days to 20 days from the initial exceedance. This is comparable to the CARB convention of 10 days for the first occurrence and 10 days for the second from the last day of the first occurrence of exceedance. See also response to Comment #13.

Comment #24

PAR 1150.1 subparagraph (e)(7)(C) should include the allowance for monitoring power plant components prior to a scheduled outage.

Response

The wording in subparagraph (d)(13)(A) was moved to subparagraph (e)(7)(C), maintaining the intent to allow for monitoring during scheduled outages and scheduled maintenance.

The following include additional comments that were received subsequent to the public workshop:

Comment #25

The gas probe monitoring requirements starting in paragraph (d)(9) are redundant for facilities permitted by CalRecycle as a Solid Waste Landfill. Recent changes to Title 27 require solid waste facilities to design and

implement an approved gas monitoring plan. These plans were transmitted to SCAQMD prior to approval. With this change in Title 27, the requirements in Rule 1150.1 are unnecessary and may cause future issues. Suggest relying on Title 27 approved monitoring plans for permitted facilities and PAR 1150.1 compliance for all other facilities not currently regulated under Title 27 with respect to landfill gas migration.

Response

Rule 1150.1 currently defers to Title 27 in the case of design and installation of subsurface probes. Specifically, the rule requires all active and inactive landfills that have not been given written approval by CalRecycle for installation of subsurface refuse boundary sampling probes to design and install such probes in accordance with Attachment A (sections 1.1 through 1.6 of the proposed amendment).

Comment #26

The corrective action timeframe in Rule 1150.1 is inconsistent with Title 27 and the federal Subtitle D requirements for landfills. Title 27 requires immediate verbal notification, written 7 day notification describing measures taken or planned to protect human health and the environment and a corrective action plan within 60 days outlining the corrective actions taken to resolve the probe exceedance.

Response

The proposed amendment has been updated to reflect the intent of your comment. While Title 27 allows five days from the first exceedance rather than 10 days under the proposed amendment, and a total of 60 days rather than 65 days under the proposed amendment, it is clear that meeting the requirements of Title 27 would not conflict with the requirements of the proposed amendment.

Comment #27

CARB requires quarterly integrated and instantaneous monitoring; however, Rule 1150.1 requires monthly integrated and quarterly instantaneous monitoring. Suggest that the Proposed 1150.1 be revised to be consistent with CARB. Not aware of the benefit for monthly integrated monitoring. Data should be presented to demonstrate how the additional cost to conduct this monitoring is justified.

Response

The integrated monitoring sampling provides a snapshot of the state of compliance of the entire collection system and is more helpful than the instantaneous surface monitoring which is done quarterly. This is a benefit to

public health by checking on a monthly basis that the system is in compliance. Making the requested change would be a relaxation of the SIP approved version of the rule, so this change was not made.

Comment #28

The timeline for corrective action for any exceedance as a result of integrated, instantaneous or probe monitoring is inconsistent with CARB. Rule 1150.1 requires that the wellhead will be expanded within 45 days from the third exceedance, instead of 120 days from the third exceedance (CARB). It has been very difficult over the years to expand the system within 45 days from the third exceedance. There are numerous variables that influence the performance of the gas collection system. Adding a well to the gas collection system is more than simply drilling a new well. It involves connecting it to the gas collection system, bringing it online slowly to avoid increasing the well temperature, and readjusting nearby wells. Given the nature of solid waste disposal, the location of a new well or wells is not an absolute science; quite to the contrary, it is more of an educated guess. A new well may or may not produce the methane predicted. In this case additional wells are needed.

Response

Staff recognizes that problems arise in wellhead replacement and repairs but that not all replacements and repairs require 120 days or more for compliance. Also this change would be a rule relaxation of a SIP-approved rule. However, similar to the CARB's regulation, MSW landfills can pursue an approved alternative, especially in situations where procurement of parts may be a continuing issue.

Comment #29

Sec. (d)(9) and (10), (e)(1) and Attachment A 1.0 - suggest modifying the perimeter probe requirement in this PAR to allow CCR Title 27 to take precedence and eliminate conflicts between this rule and the state regulation.

Response

Rule 1150.1 currently defers to Title 27 for design and installation of subsurface probes. Section 1.1 in Attachment A defers to CalRecycle requirements for the installation and design of subsurface probes compared to compliance with sections 1.1.1 to 1.1.4 (whenever possible). Paragraph (d)(9) of the proposed amendment requires all active and inactive landfills that have not been given written approval by CalRecycle for installation of subsurface refuse boundary sampling probes to design and install such probes in accordance with sections 1.1 through 1.4 of Attachment A to the proposed amended rule.

Comment #30

Sec. (d)(16) - We do not agree with the proposed requirement as it applies to older, smaller sites located in arid and semi-arid regions to keep negative pressure on wellheads. Many of these sites have several wells turned off due to poor gas quality and can show pressure is a function of temperature and barometric pressure. The wells have 0.01 to 0.05 inches of water column. We want to maintain the wells in case of wet years, which cause an increase in gas production. This section should consider the increased potential for landfill fires caused by the continuous, and perhaps unnecessary, introduction of vacuum to the refuse prism creating an oxygen rich environment.

Response

The CARB regulation for MSW landfills contains the same negative pressure requirements for all wellheads, so SCAQMD staff cannot omit this requirement. Similar to the allowances provided for in the CARB regulation, subparagraph (i)(2) of the proposed amendment provides for use of an approved alternative for landfills that can demonstrate sufficient need.

Comment #31

Sec. (e)(3)(A) and (f)(1) - These sections require that records be maintained at the landfill site. Most of the sites we operate are remote un-manned sites. We recommend some language that allows the records to be kept at the "agency headquarters."

Response

This has been re-worded in the proposed amendment. Please see paragraph (f)(1).

Comment #32

Section (f)(1)(D) - Remedial action should not be required for exceedances of 200 ppmv as stated in this section. This should be removed as remedial action under Proposed Amended Rule 1150.1. The CARB rule only requires action for exceedances of 500 ppmv.

Response

Staff has revised the proposed amended language.

Comment #33

Section (k) - We strongly suggest that subdivision (k) include exemptions similar to the CARB rule based on the landfill size, such as the 450,000 tons of waste-in-place threshold set forth in the CARB rule.

Response

While the CARB regulation uses a 450,000 ton threshold to determine if a Gas Collection and Control System is required, current Rule 1150.1 historically has not had an exemption threshold and to incorporate one would be a relaxation of a SIP-approved rule.

Comment #34

SCAQMD should hold more public workshops so that many of these comments and suggestions may be discussed in more detail. The schedule for adoption of this rule should occur later to allow for those detailed discussions to occur.

Response

Staff has met with individual commenters subsequent to the public workshop, based on expressed interest and have incorporated the results of these discussions into the proposed amendment.

The following include additional comments that were received subsequent to the release of the draft staff report:

Comment #35

We wish to clarify that the PAR will become effective 1/1/11, per Section (g). The State has indicated that the regulation implementation date could be pushed back to July 2011. Will SCAQMD also push back the date for implementing the proposed changes to Rule 1150.1?

Response

The District has incorporated into the amended rule an effective compliance date of July 1, 2011. This date would apply to facilities that need to amend their compliance plans in order to comply with the amended rule, provided that applications for alternatives be submitted April 1, 2011 for approval prior to the July 1, 2011 compliance date.

Comment #36

We appreciate the added language of Section (m) that recognizes Proposition 23, however, we are concerned that if Proposition 23 passes, there could be legal challenges staying the suspension of AB32, leaving the landfill industry in "limbo" until AB32 is actually suspended [**Section (m) is triggered only if AB32 is suspended**]. Therefore, we would propose the following alternate language:

If the state ballot measure to suspend AB32 is approved, the provisions of this rule shall not become effective until it is found that AB32 is suspended, at which time the provisions of this rule will revert to the March 17, 2000 version. If the state ballot measure is approved and its implementation stayed by legal challenges, the provisions of this rule shall only come into effect if it is found that the ballot measure is not valid for the provisions of Article 4, Subarticle 6, sections 95460 to 95476, title 17, of the California Code of Regulations (Methane Emissions from Municipal Solid Waste Landfills).

Response

Subdivision (m) has been removed from the proposed amendment following the November 2010 election and the resultant "no" vote outcome on Proposition 23.

Comment #37

Section (d)(9) requires compliance with Section 1.1 through 1.6 of Attachment A if subsurface probes have not been issued prior written approval. Most landfills have gotten their existing probe systems grandfathered in as part the Compliance Plans issued under the 1998 Rule 1150.1 modifications. As the SCAQMD is aware, many of the landfills operating in the SCAB have gone through extensive upgrades to their probe systems as a result of the new Title 27 provisions that have been overseen by CalRecycle. Many of us have not yet updated our Compliance Plans to reflect these changes, nor received written approval from the SCAQMD. As currently written, the PAR 1150.1 would require all the landfill owner/operators who have upgraded, or are in the process of upgrading their probe systems to now have to reapply to the SCAQMD and demonstrate compliance with the provisions of Section 1.1 through 1.6 of Attachment A.

The approval process undertaken by CalRecycle for new or modified probe systems is a case-by-case determination based upon the underlying geology of the landfill. The resultant probe construction and placement may or may not be fully consistent with the requirements outlined in Attachment A, but the overall system will be more protective of preventing landfill gas migration than following the more general approach outlined in Attachment A. Although the "response to comments" in the draft Staff Report seems to indicate that the Title 27 probe systems take precedence over the SCAQMD design approach, the actual rule language specifies clearly that both Title 27 and PAR 1150. 1, Section 1.1 through 1.6 of Attachment A, must be met. We suggest the following amended language Section 1.1 in Attachment A to ensure that the Title 27 subsurface probe approval process under CalRecovery would be the primary authority for probe system approval:

It is the District's intent that subsurface refuse boundary probes required by paragraph (d)(9) of Rule 1150.1 be designed and installed in such a manner as to comply with the requirements set forth in Title 27, as administered by ~~of~~ CalRecycle ~~(whenever possible)~~, if applicable. If the Title 27 probe requirements are not applicable, then ~~and~~ meet the requirements set forth in Sections 1.1.1 through 1.1.4. Irrespective of Title 27 probe applicability, the Executive Officer may make a finding that more stringent probe requirements are necessary.

Response

The proposed amendment is not intended to modify the intent of existing rule language relative to Attachment A and subsurface refuse boundary sampling probes. Historically, upgrades to the subsurface monitoring system, whether driven by Title 27 or otherwise, have been addressed via the Rule 1150.1 Compliance Plan through approved alternatives. The District intends to continue this practice, and has not proposed any changes to existing rule language in this regard. While the District understands the efforts landfills have undertaken to comply with the provisions of Title 27, because the focus of CalRecycle is not identical to that of the District with respect to gas migration, the District intends to continue to reserve the option to review and evaluate subsurface gas migration monitoring systems with respect to air quality impacts, as provided for in existing rule language.

Comment #38

In Section (d), it is still not clear when a Design Plan is needed or existing plans need to be updated. The language seems to indicate that if we have valid permits for the gas collection and control systems and meet the requirements of Section (d)(1)(A) through (d)(1)(C), then a Design Plan is not needed. Is this interpretation correct? However, what happens if we are expanding the gas system or control system requiring new or modified permits? Section (d)(3) seems to indicate that in this situation, we would need to amend "*the existing design plan to include any necessary updates or addenda*." If our interpretation of (d)(3) is correct, as stated above, we would object to this approach. Design plans have never been part of the Rule 1150.1 process and would represent additional administrative work that is unnecessary. The SCAQMD has successfully relied on permits and alternative Compliance Plans to ensure systems are in place to meet the stringent surface gas standards, and in fact by your own writings, the industry has already been mostly been in compliance with the new 25 ppm integrated threshold. We see no reason to deviate from this successful approach. Therefore, to address this concern, we would suggest the following amendment to Section (d)(3):

Any owner or operator of existing gas collection and gas control systems who modifies those systems to meet the requirements of this rule shall submit for approval to the Executive Officer an amendment of any existing design plans to include any necessary updates or addenda, unless the proposed system will be issued a valid Permit to Construct or Permit to Operate that meets the requirements of subparagraphs (d)(1)(A) through (d)(1)(C).

This approach would now be consistent with the language in Section (d)(1).

Response

If a design plan was not previously required under Rule 1150.1, updates to a design plan would not be required; rather any updates subject to the proposed amendment would be addressed through the landfill permit or compliance plan as appropriate.

Comment #39

We would like to clarify that the natural gas or propane flow referred to in Section (d)(1)(C)(ii)(III) is to the pilot, not the burner.

Response

The wording for subclause (d)(1)(C)(ii)(III) is identical to the CARB regulation and the District intends to maintain equivalency with both the language and the intent. *See also response to CARB comment #4.*

Comment #40

In Section (d)(1)(C)(ii)(IV), the parameter of importance (for enclosed flares) is temperature, which already has limits contained within Rule 1150.1. Therefore, we suggest the following minor modification to the language:

The operating parameters to be monitored are specified in paragraph (e)(7)(A)(i).

Response

Paragraph (e)(7) refers to subparagraph (e)(7)(A), which includes the requirements associated with (e)(7)(A)(i) and (e)(7)(A)(ii); because it accomplishes the same intent as the comment, no change is proposed.

Comment #41

Section (d)(1)(C)(iv) is still problematic. As currently written, it could be read that engines must meet the 99% destruction efficiency. We suggest the following amendment to (iv)(I):

The gas control device shall achieve a methane destruction efficiency of at least 99% by weight~~,~~ or if a ~~L~~lean burn combustion engine~~s~~, shall instead reduce the outlet ….

Section (d)(1)(C)(iv)(II) should be removed because it is repetitive and once again could indicate that engines need to meet the 99% destruction efficiency.

Section (d)(1)(C)(iv)(V) is too broad. We suggest the following rule language amendment:

The operating parameters to be monitored, for flares, are specified in paragraph (e)(7)(A)(i), and for all other devices, in paragraph (e)(7)(B).

Response

Subparagraph (d)(1)(C)(iv) is the same as in the CARB regulation for gas control devices other than flares. In order to maintain equivalency and intent no changes are proposed. Staff agrees that subparagraph (d)(1)(C)(iv)(II) is redundant and has revised the proposed amendment accordingly. Finally, staff believes that the proposed alternative language of the last part of this comment is not needed to improve the intent of the rule and therefore no changes are proposed.

Comment #42

We need to discuss the temperature requirements that are established in Sections (e)(7) and (f)(1)(L)(i). When Rule 1150.1 was revised in 1998, we received the temperature exception language for boilers, but not for other devices such as engines and turbines. The temperature requirements should only apply to flares to establish a surrogate for destruction efficiency of toxics and VOCs. Other combustion devices achieve high destruction efficiency by other means that are not easily measured. Do we need a rule change to reflect this, or can this simply by handled in the Compliance Plans as an alternative?

Response

Staff believes that this situation is best handled as an alternative in an approved compliance plan, due to the case-by-case specificity of the assessment.

Comment #43

In Section (f)(4), is the "responsible company official" the same as in Title V? Realize that every landfill impacted by Rule 1150.1 is not necessarily a Title V facility.

Response

The proposed language "responsible company official" has been changed to "responsible official" to reflect the intent of this comment and maintain equivalency with the CARB regulatory language.

Comment #44

Section (f)(1)(H), requires recordkeeping for instances of construction where solid waste material is exposed. This broad language would include installation of gas systems, for instance, that are normally exempt. We believe that this recordkeeping is unnecessary and actually satisfied by other SCAQMD requirements or regulations. For example, permits to construct for gas system installations have requirements for minimizing odors and emissions associated with these activities. Other categories of construction that expose solid waste are covered under Rule 1150, requiring a detailed plan. This extra level of recordkeeping is unnecessary and not consistent with the streamlining efforts SCAQMD is trying to achieve. We therefore recommend the following language to address these concerns:

> *During construction that requires exposing solid waste material to the atmosphere, the following records are required unless adequate mitigation is prescribed in a Permit to Construct and/or operate, or a Rule 1150 Excavation Management Plan.*

Response

While permit conditions may cover the same requirements for records as a regulation or rule, this does not require landfills to maintain two sets of records, rather the same set of records would satisfy both conditions. Inclusion of recordkeeping requirements as part of rule making ensures consistency for affected sources, including permitted and new sources.

Comment #45

Does the current version of Rule 1150.1 that has been deemed to be equivalent to the Federal EG regulation, not the NSPS standards for new landfills, as described on page 5? The new landfill NSPS standards are enforced by AQMD separately from Rule 1150.1.

Response

Although the District has incorporated the provisions of the NSPS into Rule 1150.1, federal regulations may be cited separately in enforcement matters where applicable.

Comment #46

On Page 8 the required destruction efficiencies are described for enclosed combustion devices, however, it is not indicated that these requirements do not apply to engines that have a separate requirement of 3,000 ppm.

Response

This section was updated to indicate that internal combustion engines have a separate requirement of 3,000 ppmv.

Comment #47

Page 7 incorrectly describes wellhead pressure monitoring as an "updated standard" when it was incorporated from the CARB rule.

Response

The wellhead pressure monitoring relative to the current Rule 1150.1 is an update.

Comment #48

The description of integrated monitoring on the middle of page 7 is incorrect, integrated monitoring is done using instrument analysis of TOC over a 50,000 square foot grid, and selected grids are sampled for a lab analysis of TAC.

Response

The wording was changed to reflect instrument analysis for TOC and lab analysis of TAC.

Comment #49

Monitoring should be described as quarterly, not every 3 months (page 9).

Response

The staff report correctly meets the intent of the comment by describing the period as quarterly. The parenthetical descriptor of "or every 3 months" identifies a quarter as three months and is neither regulatory language or conflicting language.

Comment #50

The method of hydrocarbon monitoring with location identification described on page 10 is under development and is not available.

Response

No changes will be made to this section since the purpose of describing the hydrocarbon monitoring with location identification is not a regulatory requirement, but serves to illustrate methods that have been witnessed and may be used in the future.

Comment #51

We are not aware of AQMD pre-approved forms for surface gas data, and are already monitoring using an AQMD approved instrument that integrates surface gas monitoring. Is a Guidance document (as described) being developed by the AQMD?

Response

The wording "pre-approved" was changed to "approved" and refers to subdivision (f) that requires that forms, whether electronic or paper media, be approved by the Executive Officer.

Comment #52

The last paragraph on page 11 should be revised to represent the rule's timeline requirement for remediation of a positive pressure well to initiate action within 5 days, re-monitor within 15 days of the first exceedance, and if still in exceedance expand the gas collection system with any new wells being placed in operation within 120 days of the first exceedance.

Response

The staff report has been updated to replace the phrase "an additional 20 days" with the 5/15 day requirement to address the intent of this comment and for consistency with CARB's regulation.

CARB Comments

The following summarizes the comments received from CARB (letter dated October 7, 2010) following release of the draft staff report and proposed amended rule.

Comment #1

General: On June 17, 2010, the Office of Administrative Law approved California Code of Regulations, title 17, article 4, subarticle 6, sections 95460 to 95476, Methane Emissions from Municipal Solid Waste Landfills ("regulation") and filed it with the Secretary of State. The regulation became effective on the same day. ARB staff understands that SCAQMD is planning to implement and enforce the regulation by amending Rule 1150.1 to make it

equivalent to, or more stringent than the regulation. We would like to make SCAQMD aware that it must enter into a Memorandum of Understanding with ARB regarding the implementation and enforcement of the regulation.

Response

The District is aware of the Memorandum of Understanding obligation and will enter into the appropriate agreement as needed.

Comment #2

Section (a) (Purpose): This section appears to isolate the reduction of methane emissions as a secondary benefit of proposed amended Rule. We suggest rewording this section as follows: "The purpose of this rule is to reduce methane (a greenhouse gas), non-methane organic compounds (NMOC), volatile organic compound (VOC), and toxic air contaminant (TAC) emissions from……to prevent public nuisance and possible detriment to public health caused by exposure to such emissions."

Response

Staff believes the currently proposed language identifies control of methane emissions as an additional benefit, not a secondary benefit. The currently proposed language was intended to address a public comment centered on the nature of methane as compared to the historically controlled pollutants.

See also response to Public Comment #14.

Comment #3

Section (d)(1)(A): (Active Landfill Design and Operation Requirements): This section requires the use of one of the equations in 40 CFR, Part 60, §60.755(a)(1) to determine the maximum gas generation flow rate. These equations are not equivalent because of their inability to allow for potential methane generation capacity variation on a year-to-year basis over the lifetime of the landfill, which is very important to the results. For equivalency, §95471(e) of ARB's landfill regulation (Test Methods and Procedures) requires the use of the 2006 Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories, Chapter 3 (or, "IPCC model"), using a landfill gas capture factor of 75 percent to determine the captured gas expected flow rate from the total gas generation estimates of the IPCC model. The main advantages of the IPCC model is that it allows the user to: adjust the potential methane generation capacity on a year to year basis; use specific degradation parameters by waste type; use time delays other than six months; and correct for methane oxidation. The landfill gas tool developed by ARB staff is an acceptable method to use to compute the captured gas expected flow rate and is based on the IPCC model.

Response

Although the calculation models associated with subdivision (d)(1)(A) apply only to facilities that do not have gas collection and control systems and may not apply to locations within the District, staff agrees that reference to the updated equations is warranted for consistency and the proposed language has been revised accordingly.

Comment #4

Section (d)(1)(C)(ii)(III) (Active Landfill Design and Operation Requirements): This section reads as follows, "During restart or startup, an enclosed flare shall have sufficient flow of propane or commercial natural gas to the burners ……" For clarity, the phrase "to the burners" should be replaced with "to the pilot light."

Response

Although the District agrees with the intent of this comment, the wording of subclause (d)(1)(C)(ii)(III) was incorporated from CARB language [Article 4, subarticle 6 §95464, title 17, CCR (b)(2)(A)(3)]. The District would also like to maintain consistency with the adopted regulatory language and therefore has communicated consistent intent within the staff report while maintaining the regulatory language as adopted by CARB.

Comment #5

Section (g) (Active Landfill Compliance Schedule): This section incorrectly refers to the date "July 1, 2001." The correct date should be "July 1, 2011."

Response

The proposed amendment has been revised accordingly.

Comment #6

Section (h)(2) (Inactive Landfill Requirements): This section requires owners and operators of inactive MSW landfills without gas collection and control systems to install controls based on: surface methane concentrations exceeding 500 ppmv at any location on the landfill surface, the results of a screening questionnaire and solid waste air quality assessment test, and upon formal notification from the Executive Officer. This section is not equivalent to § 95463(b) of the regulation which states that owners and operators of all MSW landfills having 450,000 tons of waste-in-place or greater and a landfill gas heat input capacity of greater than or equal to 3.0 MMBtu/hr must either install a gas collection and control system, or conduct a surface test to demonstrate that there is no surface methane leaks of 200 ppmv or greater on the landfill surface after four consecutive monitoring periods.

For equivalency, section (h)(2)(B) of this section should be revised as follows:

> "Submit the following data and/or meet the required action in paragraph (h)(1):
>
> (iv) Calculate the landfill gas heat input capacity pursuant to § 95471(b) of California Code of Regulations, title 17, article 4, subarticle 6 and submit a Landfill Gas Heat Input Capacity Report to the Executive Officer. If the landfill gas heat input capacity is greater than or equal to 3.0 MMBtu/hr, the owner or operator must comply with paragraph (h)(3) or conduct a surface test to demonstrate that there is no surface methane leaks of 200 ppmv or greater on the landfill surface after four consecutive monitoring periods.
>
> (h)(3) upon notification by the Executive Officer that a landfill gas collection and control system and/or…….comply with paragraph (h)(1)."

Response

The proposed language has been revised to change the surface test criteria from 500 ppmv to 200 ppmv in order to maintain equivalent stringency with the CARB regulation. It should be noted that paragraph (h)(2) is not expected to apply to any facility located within the District, as evidenced by current district records and CARB's current inventory of inactive landfills, because there are no known inactive landfills located in the South Coast Basin without a collection system. This is due in large part to the current rule. As historically implemented, landfills that did not meet the less than 500 ppmv surface monitoring criteria (now proposed for revision to less than 200 ppmv) were required to submit information through the screening questionnaire and the solid waste air quality assessment test, pursuant to the Health & Safety Code subpart 41805.5, in order to determine the appropriate type of gas collection and control system that the landfill would be required to install. In no case has an inactive landfill been deemed to be exempted from installation of collection or control systems except as provided by provisions of subdivision (k). (*See also response to CARB comment #7).*

It is staff's position that the revised proposed amendment is at least equivalent in stringency, and perhaps more stringent to subpart 95463(b) of the CARB regulation because the revised proposed amendment, , would not exempt landfills based solely on the amount of waste-in-place and gas generated rate, but also relies on additional criteria, including an evaluation of toxic air contaminant and public nuisance risk.

Comment #7

Section (k) Exemptions: This section temporarily exempts a MSW landfill from all or any portion of the requirements of the Rule based on toxic air contaminant emissions and health risk analysis, proximity to sensitive receptors, emission migration, and other criteria, but does not significantly consider these exemptions from a greenhouse gas perspective. This section is not equivalent to § 95463 (Determination for Installing a Gas Collection and Control System) of the regulation and should be revised as follows:

"An MSW landfill may be temporarily exempt from all or any portion of the requirements of this rule if……

(1) The MSW landfill complies with…….

(5) The MSW landfill is closed or inactive and has a landfill gas heat input capacity of less than 3.0 MMBtu/hr. and submits a Waste-in-Place Report and all instantaneous surface monitoring records to the Executive Officer, or;

(6) The MSW landfill has 450,000 tons of waste-in-place or greater and a landfill gas heat input capacity greater than or equal to 3.0 MMBtu/hr and the owner or operator demonstrates to the satisfaction of the Executive Officer that after four consecutive quarterly instantaneous monitoring periods there is no surface methane leak exceeding 200 ppmv. If the landfill is active the heat capacity must be re-calculated annually.

(A) If the MSW landfill is closed or inactive and passes the surface demonstration test; the owner or operator must submit a Waste-in-Place report and all instantaneous surface monitoring records to the Executive Officer."

Response

Staff understands CARB's comment to focus on the requirement to install gas collection and control systems based on a minimum gas generation rate. As such, staff has incorporated language into the proposed amendment to limit the exemption to the requirements of paragraphs (d) and (e) related to installation of such controls and maintain consistency with the state minimum threshold levels by allowing for exemptions based on the above commented criteria of quantity of waste in place, minimum gas heat input generated, and instantaneous surface monitoring results.

Comment #8

Attachment A: We recommend that Figure 2 be revised to more accurately reflect a walking pattern based on 25 foot spacing. In addition, Figure 3 does not provide a column for recording methane concentrations. We recommend

adding a column for tracking surface methane concentrations for both integrated and instantaneous surface monitoring.

Response

Both Figure 2 (Typical Landfill Walk Pattern for a 50,000 square foot Grid) and Figure 3 (Quality Control Sheet) of Attachment A to the proposed amendment are illustrative examples for landfill owners and operators to refer to in the development of appropriate walking patterns and recordkeeping forms specific to individual locations. Because of the variability of landscapes and operational practices, it is neither expected, nor the practice under the current rule, for landfill owners and operators to follow the exact walking pattern depicted by Figure 2, or the exact replica of the Quality Control Sheet of Figure 3. However, to provide additional clarification, the title of Figure 3 has been updated to include the word "Typical" for consistency. Staff believes that Figure 2 and Figure 3 meet the intent to provide illustrative examples rather than define prescriptive requirements, and provide landfill owners and operators the flexibility to record the information and data needed to demonstrate compliance with the proposed amendment.

Other Comments

In addition to the above comments, staff has received and reviewed numerous comments identifying typographical and grammatical errors, as well as cross-referencing updates. Staff appreciates the input and has updated the proposed rule language as appropriate.

CONCLUSION

If approved, the proposed amendment to Rule 1150.1 will incorporate existing federal requirements and the requirements of the CARB regulation adopted to implement the AB 32 early action measure addressing methane emissions from municipal solid waste landfills. There is no expected significant cost increase associated with the proposed amendment because the collection and control equipment required by the CARB regulation have been installed and used by landfills within the District for more than twenty years to control non-methane organic compounds. This amendment consolidates requirements and will reduce redundant recordkeeping and reporting. The only potential cost associated with this amendment are some administrative costs that may occur if an approved alternative is pursued or a change to facility permits or plans is needed.